DO NOT ENTER: /JF/

AMENDMENT

LISTING OF CLAIMS:

The following listing supplants all prior listings of the claims.

1. (Withdrawn) Apparatus for simulating a process in which ore, in a heap, is microbiologically leached, the apparatus including a housing in which material, representative of the ore, is microbiologically leached, a plurality of sensors for measuring the temperature of the material at each of a plurality of locations in the housing, and a control system which, in response to temperature measurements from the sensors, controls heat loss from the material in the housing to atmosphere.

2. (Withdrawn) Apparatus according to claim 1 wherein the housing is a tubular column.

3. (Withdrawn) Apparatus according to claim 2 wherein the column is oriented so that it extends with its longitudinal axis vertical and with an upper and lower end.

4. (Withdrawn) Apparatus according to claim 2 wherein the column is made from a plurality of modular components which are secured together.

5. (Withdrawn) Apparatus according to claim 2 wherein the column is divided into a plurality of segments which extend adjacent each other in a vertical direction and the temperature of each segment is controllable, to a substantial extent independently of the temperatures in adjacent segments.

6. (Withdrawn) Apparatus according to claim 1 which includes insulation for restricting heat loss from the housing.

7. (Withdrawn) Apparatus according to claim 1 which includes at least one heat source which is controlled by the control system and which raises the temperature of

the housing, at least at one location, in a manner which depends on the temperature of the ore inside the housing adjacent the at least one location.

8. (Withdrawn) Apparatus according to claim 7 wherein the heat source includes a plurality of electrical elements each of which is separately controllable by the control system thereby to control the temperature of the housing at each of a plurality of locations.

9. (Withdrawn) Apparatus according to claim 1 wherein the control system is operated to minimize heat loss from the material in the housing to atmosphere.

10. (Withdrawn) Apparatus according to claim 1 which includes a system for supplying an acidic liquid medium, on a controlled basis, to an upper end of the housing to simulate the act of irrigating an upper surface of a heap which is leached on a commercial basis.

11. (Withdrawn) Apparatus according to claim 1 which includes a system for supplying gas on a controlled basis to a lower end of the housing.

12. (Withdrawn) Apparatus according to claim 1 which includes a control system for controlling the supply of liquid and gas to the housing thereby to control at least the temperature, or position, of at least one relatively high temperature zone in the housing.

13. (Previously Presented) A method of simulating a process in which ore, in a heap, is microbiologically leached, the method including the steps of microbiologically leaching material, representative of the ore, in a housing defining an enclosed, confined volume, monitoring the temperature of the material, inside the volume, at each of a plurality of locations and, in response to the monitored temperatures, controlling heat loss from the confined volume effectively to zero.

14. (Canceled)

15. (Original) A method according to claim 13 which includes the step of controlling the operation of each of a plurality of heat sources which are positioned at predetermined locations within the confined volume to control heat loss from the confined volume.

16. (Original) A method according to claim 13 which includes the step of establishing a controlled temperature gradient inside the material.

17. (Original) A method according to claim 16 wherein the temperature gradient is established by controlling the supply or composition of gas or liquid to the confined volume.

18. (Original) A method according to claim 13 which includes the step of supplying an acidic liquid medium, on a controlled basis, to an upper end of the confined volume to simulate the act of irrigating an upper surface of a heap which is leached on a commercial basis.

19. (Original) A method according to claim 13 which includes the step of supplying gas on a controlled basis to a lower end of the confined volume.

20. (Original) A method according to claim 19 wherein the gas includes oxygen and carbon dioxide.

21. (Original) A method according to claim 13 which includes the step of manipulating the position of at least one temperature zone in the material in the confined volume.

22. (Original) A method according to claim 13 which includes the step of modifying the temperature of a given zone in the material.

23. (Previously Presented) A method of simulating a heap-leaching process which includes the steps of microbiologically leaching ore in a housing defining an

enclosed, confined volume, controlling heat loss from the confined volume effectively to zero, and varying process parameters within the confined volume.

24. (Original) A method according to claim 23 wherein the process parameters are varied to control at least one of the following: the temperature of at least one relatively high temperature zone in the confined volume; and the position of at least one relatively high temperature zone in the confined volume.

25. (Currently Amended) A method of simulating a process in which ore, in a heap, is microbiologically leached, comprising: microbiologically leaching material, representative of the ore, in a housing that defines an enclosed, confined volume; monitoring the temperature of the material, inside the volume, at each of a plurality of locations; ~~modifying the temperature of a given zone in the material;~~ and, controlling the operation of each of a plurality of heat sources that are positioned at predetermined locations relative to the volume, in response to the monitored temperatures~~, controlling~~ to control heat loss from the confined volume effectively to zero.